

## CLAIMS:

1. Elastic drainage pavement for use on existing pavement comprising a primer layer which is provided on the existing pavement and comprises 10-20 % by weight of PPG, 5-10 % by weight of TMP, 5-10 % by weight of 1,3-BG, 15-25 % by weight of TDI, 49-64.9 % by weight of a solvent (xylene or methylethylketone) and 0.1-1.0 % by weight of an additive (defoaming agent); and an elastic drainage layer spread over the primer layer and prepared by mixing waste-polyurethane chips and a binder in the weight ratio of 3:1 to 4:1, the waste-polyurethane chips having the size of 1 to 5 mm, and the binder comprising 50-70 % by weight of PPG, 5-10 % by weight of PBG, 3-5 % by weight of 1,3-BG, 20-30 % by weight of MDI and 2-5 % by weight of TDI.

2. Elastic drainage pavement as claimed in claim 1, wherein the waste polyurethane chips are obtained by collecting waste-polyurethane scraps from soles of shoes, parts of toys, parts of refrigerators and vehicles, decrepit polyurethane resilient pavement, etc. and separating the scraps according to their colors; removing impurities attached on the scraps; pulverizing the waste-polyurethane scraps into a predetermined size; mixing the scraps with 0.3-1.0kg of stearic acid, 20-30kg of heavy calcium carbonate, 0.1-2.0kg of titanium dioxide and 5kg or less of a pigment or 20-40kg of a photoluminescent pigment, based on 100kg of the pulverized waste-polyurethane scraps by stirring; heating and extruding the mixture in the form of a plate; and then condensing and cutting the extruded mixture in the size of 1 to 5 mm.

3. Elastic drainage pavement as claimed in claim 2, wherein a flame retardant is added to the mixture in the range of 1-2% by weight of the scraps in preparing the waste-polyurethane chips.

5                    4. Elastic drainage pavement as claimed in claim 2, wherein depending on usages of the elastic pavement, a foaming agent is used to adjust the hardness of the waste-polyurethane chips.

                     5. Elastic drainage pavement as claimed in claim 3, wherein  
10 depending on usages of the elastic pavement, a foaming agent is used to adjust the hardness of the waste-polyurethane chips.

                     6. Elastic drainage pavement as claimed in claim 2, wherein  
the waste-polyurethane chips are cut in the shape of a strand having the length of  
15 10-30mm and the thickness of 1-3mm to be used in part with the waste-polyurethane chips having the size of 1 to 5 mm.

                     7. Elastic drainage pavement as claimed in claim 3, wherein  
the waste-polyurethane chips are cut in the shape of a strand having the length of  
20 10-30mm and the thickness of 1-3mm to be used in part with the waste-polyurethane chips having the size of 1 to 5 mm.

                     8. Elastic drainage pavement as claimed in claim 1, wherein  
the waste-polyurethane chips can be replaced in part with new polyurethane chips.

9. Elastic drainage pavement as claimed in claim 2, wherein  
the waste-polyurethane chips can be replaced in part with new polyurethane chips.

10. Elastic drainage pavement as claimed in claim 8, wherein the new  
5 polyurethane chips are prepared by mixing 1 part by weight of liquid polyurethane with  
0.5-1.2 parts by weight of heavy calcium carbonate, and 0.01 part by weight or less of a  
pigment or 0.1-0.4 parts by weight of a photoluminescent pigment; pouring the mixture  
in a mold and curing in a sheet form; and then pulverizing the polyurethane sheet into  
the particle size of 1-5mm.

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11. Elastic drainage pavement as claimed in claim 9, wherein the new  
polyurethane chips are prepared by mixing 1 part by weight of liquid polyurethane with  
0.5-1.2 parts by weight of heavy calcium carbonate, and 0.01 part by weight or less of a  
pigment or 0.1-0.4 parts by weight of a photoluminescent pigment; pouring the mixture  
15 in a mold and curing in a sheet form; and then pulverizing the polyurethane sheet into  
the particle size of 1-5mm.

12. A method of paving elastic drainage pavement on existing pavement comprising the steps of:

cleaning the existing pavement;

paving the existing pavement with a primer layer and then an elastic

5 drainage layer,

wherein the primer layer comprises 10-20 % by weight of PPG, 5-10 % by weight of TMP, 5-10 % by weight of 1,3-BG, 15-25 % by weight of TDI, 49-64.9 % by weight of a solvent (xylene or methylethylketone) and 0.1-1.0 % by weight of an additive (defoaming agent), and the elastic drainage layer is prepared by mixing

10 waste-polyurethane chips and a binder in the weight ratio of 3:1 to 4:1 and pouring the mixture onto the primer layer in situ, the waste-polyurethane chips having the size of 1 to 5 mm and the binder comprising 50-70 % by weight of PPG, 5-10 % by weight of PBG, 3-5 % by weight of 1,3-BG, 20-30 % by weight of MDI and 2-5 % by weight of TDI;

15 pressing with a roller of 20-30 kg heated to temperatures of 50-80°C and trowelling the elastic drainage layer in the same temperature; and then curing for about 5 to 24 hours.

13. A method of paving elastic drainage pavement as claimed in claim 12,

20 wherein the waste-polyurethane chips are obtained by collecting waste-polyurethane scraps from soles of shoes, parts of toys, parts of refrigerators and vehicles, decrepit polyurethane resilient pavement, etc. and separating the scraps according to their colors; removing impurities attached on the scraps; pulverizing the waste-polyurethane scraps into a predetermined size; mixing the scraps with 0.3-1.0kg of stearic acid, 20-30kg of

heavy calcium carbonate, 0.1-2.0kg of titanium dioxide and 5kg or less of a pigment or 20-40kg of a photoluminescent pigment, based on 100kg of the pulverized waste-polyurethane scraps by stirring; heating and extruding the mixture in the form of a plate; and then condensing and cutting the extruded mixture in the size of 1 to 5 mm.

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14. A method of paving elastic drainage pavement as claimed in claim 13, wherein the waste-polyurethane chips made by using the pigment and the waste-polyurethane chips made by using the photoluminescent pigment are separately prepared and respectively mixed with the binder, so that they can be separately distributed and spread in their predetermined positions.

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15. A method of paving elastic drainage pavement as claimed in claim 12, wherein the waste-polyurethane chips can be replaced in part with new polyurethane chips.

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16. A method of paving elastic drainage pavement as claimed in claim 13, wherein the waste-polyurethane chips can be replaced in part with new polyurethane chips.

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17. A method of paving elastic drainage pavement as claimed in claim 15, wherein the new polyurethane chips are prepared by mixing 1 part by weight of liquid polyurethane with 0.5-1.2 parts by weight of heavy calcium carbonate, and 0.01 part by weight or less of a pigment or 0.1-0.4 parts by weight of a photoluminescent pigment; pouring the mixture in a mold and curing in a sheet form; and then pulverizing the

polyurethane sheet into the particle size of 1-5mm.

18. A method of paving elastic drainage pavement as claimed in claim 16,  
wherein the new polyurethane chips are prepared by mixing 1 part by weight of liquid  
5 polyurethane with 0.5-1.2 parts by weight of heavy calcium carbonate, and 0.01 part by  
weight or less of a pigment or 0.1-0.4 parts by weight of a photoluminescent pigment;  
pouring the mixture in a mold and curing in a sheet form; and then pulverizing the  
polyurethane sheet into the particle size of 1-5mm.